

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number  
**WO 2005/015489 A1**

(51) International Patent Classification<sup>7</sup>:  
H01L 29/15, G01R 29/24

G06N 1/00,

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(21) International Application Number:  
PCT/AU2004/001067

(22) International Filing Date: 10 August 2004 (10.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2003904256 11 August 2003 (11.08.2003) AU

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

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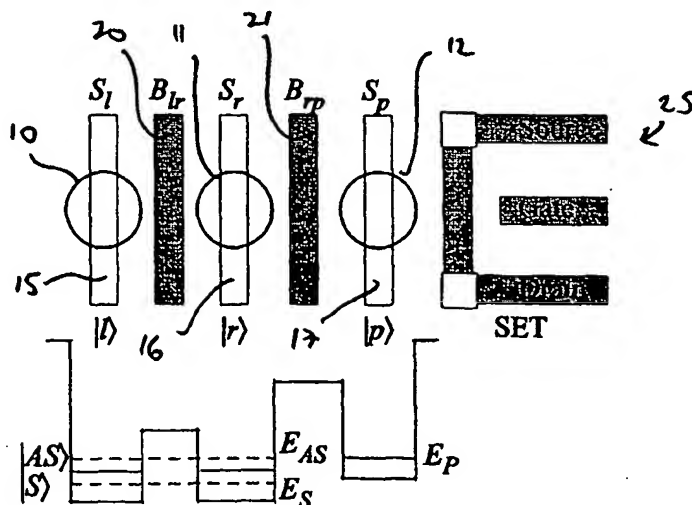
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Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: QUBIT READOUT VIA CONTROLLED COHERENT TUNNELLING TO PROBE STATE



(57) Abstract: This invention concerns quantum computers in which the qubits are closed systems, in that the particle or particles are confined within the structure. A "site" can be produced by any method of confining an electron or other quantum particle, such as a dopant atom, a quantum dot, a cooper pair box, or any combination of these. In particular the invention concerns a closed three-site quantum particle system. The state in the third site is weakly coupled by coherent tunnelling to the first and second states, so that the third state is able to map out the populations of the first and second states as its energy is scanned with respect to the first and second states. In second and third aspects it concerns a readout method for a closed three-state quantum particle system.